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**The Mediating Role of Pain Acceptance in the Relation Between Perceived Injustice and
Chronic Pain Outcomes in a Community Sample**

Running Head: THE MEDIATING ROLE OF PAIN ACCEPTANCE

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Abstract

Objective: Perceived injustice has been defined as an appraisal regarding the severity and irreparability of loss associated with pain, blame, and a sense of unfairness. Recent findings suggest that perceived injustice is an important risk factor for elevated disability associated with chronic pain. However, the mechanisms by which this perception leads to disability are not well understood. Therefore, the current study aimed to examine the mediating role of pain acceptance on the relation between perceived injustice and chronic pain outcomes (pain intensity, pain-related disability, and psychological distress).

Method: This cross-sectional study used a sample of 475 individuals from the community who suffer from chronic pain. Participants completed the *Injustice Experience Questionnaire*, the *Chronic Pain Acceptance Questionnaire*, a pain rating intensity scale, the *Modified Brief Pain Inventory*, and the *Hospital Anxiety and Depression Scale*.

Results: Results revealed significant direct links from perceived injustice to pain intensity ($c' = .416$, $p < .001$), disability ($c' = .891$, $p < .001$), and distress ($c' = .261$, $p < .001$), as well as indirect links from perceived injustice through acceptance of pain to pain disability ($ab = .512$, $p < .001$, $CI = .390$ to $.635$) and psychological distress ($ab = .106$, $p < .001$, $CI = .077$ to $.136$).

Discussion: Clinical and theoretical implications are discussed along with future research directions.

Keywords: Chronic Pain; Perceived Injustice; Pain Acceptance; Pain Disability; Psychological Distress

The Mediating Role of Pain Acceptance in the Relation Between Perceived Injustice and Chronic Pain Outcomes in a Community Sample

Introduction

Perceived injustice has been defined as an appraisal regarding the severity and irreparability of loss associated with pain, and thoughts of blame, and unfairness. Patient statements such as “it all seems so unfair”, “I am suffering because of someone else’s negligence”, “nothing will ever make up for what I have gone through”, and “no one should have to live this way” reflect this perception [1]. Recent findings suggest that perceived injustice is a risk factor for poor pain-related recovery, as it has been associated with greater pain severity, depressive symptoms, post-traumatic stress symptoms, heightened protective pain behaviours, disability, and lower probability of returning to work [see 2 for a review]. This research has focussed primarily on people with musculoskeletal pain following injury [2]. However, recent studies have shown the relevance of perceived injustice in non-injury samples, including osteoarthritis and sickle-cell disease [3].

Little is presently known about the mechanisms linking perceived injustice to adverse pain outcomes. One study identified anger intensity as a complete mediator of the relation between perceived injustice and pain intensity, while anger intensity and regulation style partially mediated between perceived injustice and depression [4]. This study did not support the role of anger in the injustice-disability link. Heightened pain behaviours have been shown to partially mediate between perceived injustice and pain-related disability [5]. Therefore, further research is needed to understand the processes linking perceived injustice to adverse pain outcomes, particularly distress and disability.

It has been suggested that low levels of pain acceptance might, in part, explain the impact of perceived injustice on pain outcomes [6]. Pain acceptance describes the cessation of ineffective pain control strategies and continuing meaningful life activities even with pain [7]. Pain acceptance has been consistently associated with better functioning and mental health in individuals with chronic pain [7,8,9,10,11,12]. According to the psychological flexibility model within which pain acceptance has been conceptualized, people may become “stuck” in the struggle to control or avoid pain and pain-related thoughts and feelings. This natural struggle may become problematic when such avoidance does not work and comes at the expense of activities that are personally meaningful [13,14]. Considering perceived injustice, individuals may become stuck ruminating on past losses and thoughts of blame, and in behaviour patterns directed toward obtaining retribution [5,15]. In this way, perceived injustice may psychologically ‘carry the potential to coordinate passivity or a refusal of response-ability’ [16, p. 1495]. These understandable responses to pain-related injustice might thus reflect qualities of ineffective control-based strategies and disengagement that characterize low levels of pain acceptance [6]. Figure 1 shows a conceptualization of pain-related injustice perceptions within the psychological flexibility model [6]. However, a full description of the psychological flexibility model and its potential application to the experience of injustice in people with pain is outside the scope of this paper (please see [6] and [14] for a more comprehensive conceptual review).

One study [17] reported a significant negative correlation ($r = -.62, p < .001$) between perceived injustice and pain acceptance. However, research has yet to formally test whether acceptance mediates the relations between perceived injustice and chronic pain outcomes. Evidence for the mediating role of acceptance might suggest the potential usefulness of

acceptance-based treatments for improving outcomes of patients who perceive injustice, which have previously been suggested on theoretical grounds [6].

In this study, we explored whether pain acceptance mediates the relation between perceived injustice and pain outcomes within a community sample of individuals with chronic pain. It was hypothesized that perceived injustice would be positively associated with pain intensity, distress, and disability, and negatively associated with pain acceptance. We also predicted that pain acceptance would mediate the relation between perceived injustice and pain outcomes, such that lower levels of pain acceptance associated with perceived injustice would explain the positive associations between perceived injustice and pain outcomes.

Materials and Method

Participants and procedures

Participants were recruited through an association for people who live with chronic pain (*l'Association québécoise de la douleur chronique*) in the province of Quebec, Canada. Recruitment e-mails were sent to members of this association and study information was posted on their website. Participants completed self-report questionnaires at one time point using a secure website. Before completing the questionnaires, participants were informed of the voluntary nature of the study, received an information letter including a list of community resources, and signed an informed consent form. Individuals were entered in a draw and had a chance to win one of ten gift cards of a \$40 value. All information was kept confidential and anonymous. Participants were asked to answer screening questions online before accessing the questionnaires to ensure eligibility. Eligibility criteria included: a) being at least 18 years of age, b) being able to complete study questionnaires in French c) having received a diagnosis of chronic pain or reporting pain in one or more body location every day or almost every day for at

least 3 months. A Research Ethics and Integrity Committee from an Eastern Canadian university approved this study.

Measures

Socio-demographic and Pain-related Information. Participants answered questions related to socio-demographic information such as their age, education, daily occupation, and annual income. Participants also answered a series of questions related to pain, such as the diagnosis of chronic pain and the use of pain relief medication (see Table 1).

Perceived Injustice

The Injustice Experience Questionnaire [1,18] is a 12-item questionnaire that measures the degree to which individuals perceive their painful condition as unjust. The IEQ is comprised of two scales: the severity/irreparability of loss and blame/unfairness. Specific items include, “I feel as if I have been robbed of something very precious” and “It all seems so unfair”. Items are rated on a Likert scale ranging from 0 (*never*) to 4 (*all the time*). Higher scores reflect greater perceptions of injustice. Additionally, scores above the cut-off of 19 help identify individuals at risk for occupational disability [19]. This questionnaire has good test-retest reliability ($r = .90$). The alpha coefficient obtained for the current study was .90 compared to .92 for the original version [1].

Pain Acceptance

The CPAQ-8 [20,21] is an 8-item version of the Chronic Pain Acceptance Questionnaire [22] comprised of two subscales: activity engagement, which reflects the degree to which individuals continue to engage in personally meaningful activities even with pain; and, pain willingness, which reflects efforts directed at controlling pain. Specific items include, “I am getting on with the business of living no matter what my level of pain is” and “Keeping my pain

level under control takes first priority whenever I am doing something”. Items are scored on a 7-point Likert scale ranging from 0 (*never true*) to 6 (*always true*). Scores for the pain willingness subscale are reversed before calculating a total score so that higher total scores reflect greater levels of pain acceptance. The CPAQ has been used frequently in research and the short version has good psychometric properties [20]. The alpha coefficient obtained for the current study was .73, demonstrating acceptable reliability.

Pain Intensity

Participants were asked to rate the average pain they experienced in the past week on a numerical rating scale ranging from 0 (*no pain*) to 10 (*unbearable pain*). According to previous research, this type of numerical scale is a reliable measure of pain intensity [23].

Pain Disability

The Modified Brief Pain Inventory [24,25,26] is a 10-item questionnaire and a standard tool in research and clinical practice to evaluate the severity and interference of pain in daily activities [27]. Participants are asked to rate the degree to which pain interfered with various activities, such as social activities and work, in the past week. Items are rated on a Likert scale ranging from 0 (*does not interfere*) to 10 (*interferes completely*). A total score is calculated, with higher scores representing a higher level of pain interference. This questionnaire has shown good psychometric properties across a variety of chronic pain samples [28]. The internal consistency of this measure for the current study was $\alpha = .90$.

Anxiety and Depressive Symptoms

The Hospital Anxiety and Depression Scale [29,30] is a 14-item questionnaire, which evaluates psychological distress in non-psychiatric hospital contexts according to two 7-item subscales: anxiety and depressive symptoms. Specific items include, “Worrying thoughts go

through my mind” and “I have lost interest in my appearance”. This questionnaire is frequently used for people with medical conditions as it excludes items associated to somatic symptoms that could be related to a medical condition [31]. Items are scored on a 4-point Likert scale ranging from 0 to 3 with varying anchors. Higher scores reflect higher psychological distress and a cut-off score of 8 was established for each subscale [32]. This questionnaire is widely used in research and clinical settings and has good psychometric properties. The alpha of .85 in the current sample demonstrates good reliability.

Approach to Data Analysis

Prior to conducting mediation analysis, the assumption of normality was evaluated and determined to be satisfied as the distributions of all variables had indicators of skewness and kurtosis that were respectively below |2.0| and |9.0| [33]. Means and standard deviations were calculated, t-tests and ANOVAs were conducted to compare scores by pain diagnosis, and correlations were computed. For the current study, total mean scores for each questionnaire were used for conducting mediation analysis. Three models examining the degree to which chronic pain acceptance mediated the relation between perceived injustice and pain outcomes were tested (Table 3). As recommended by Preacher and Hayes [34], bias corrected (BC) confidence intervals were used with the bootstrapping (1000 samples) method in order to obtain indirect effects. This is a nonparametric resampling procedure that estimates properties of estimators based on samples drawn from the original observations, even when the underlying distribution is unknown and may not be normally distributed [35]. The SPSS macro PROCESS (version 2.13) [36] was used to conduct the mediation analyses. The alpha level for the current study was established at .01, so the findings will be referred to as “significant” or not based on this level.

Results

Descriptive Statistics

Demographic characteristics of the sample are presented in Table 1. The sample consisted of 475 participants, of which 80.9% were women and 98.5% were Caucasian. The mean age of participants was 51 years (range = 19 to 82; $SD = 11.41$). The majority of participants (96.4%) had formally received a diagnosis of chronic pain while the remaining 3.6% reported pain almost every day for at least three months, and the majority had been living daily with pain for over 7 years (61.8%). The most common pain diagnosis was fibromyalgia (41.9%) and the majority of participants (68.5%) were not working at the time of completing the questionnaires.

Means and standard deviations obtained for each questionnaire are presented in Table 2 along with zero-order correlations between variables. Participants' total mean scores on perceived injustice were above the previously established cut-off point, suggesting that they experienced clinically meaningful levels of perceived injustice [19]. The mean score for pain acceptance was comparable to previous samples [20]. The total mean score for pain disability was also consistent with previous samples [28]. Finally, participants' total score for psychological distress was above the cut-off point [32], indicating the presence of clinically relevant anxiety and depressive symptoms.

Since a large proportion of the sample had received a diagnosis of fibromyalgia (41.9%), independent sample t-tests were conducted to test for differences between participants with fibromyalgia and participants with other types of chronic pain, including back pain, neck pain, neuropathic pain, arthritis, and migraines or headaches. No statistically significant difference was observed. ANOVAs were also conducted to compare each diagnostic group. Once again, no

statistically significant difference was observed on any of the study variables across diagnostic groups. Furthermore, since the sample was comprised of a majority of female participants (80.9%), independent sample t-tests were conducted to test for gender differences among the studied variables. No statistically significant difference was found.

Zero-order correlations

Zero-order correlations among study variables are shown in Table 2. High correlations between IEQ subscales and CPAQ subscales justified use of total scores for these measures in subsequent analyses. The correlation analyses indicated that perceived injustice was significantly associated with lower acceptance of pain, higher pain intensity, disability, and psychological distress. Furthermore, results indicated that chronic pain acceptance was negatively associated with pain intensity, disability, and psychological distress. Pain intensity, disability, and psychological distress were also positively correlated with each other.

Mediation Analyses

As can be seen in Table 3, higher perceived injustice was associated with lower pain acceptance ($a = -.561$) and pain acceptance was not significantly linked to pain intensity ($b = -.161, p = 0.86$). The direct effect, that is the relationship between perceived injustice and pain intensity, was significant ($c' = .416$). However, CIs included zero ($CI = -.035$ to $.204$) for the indirect effect ($ab = .091$), indicating that chronic pain acceptance did not significantly mediate the relation between perceived injustice and pain intensity.

For the second model, higher perceived injustice was associated with lower chronic pain acceptance ($a = -.561$) and low chronic pain acceptance was linked to higher levels of pain disability ($b = -.914$). There was also evidence of a significant direct effect between perceived injustice and pain disability ($c' = .891$). Confidence Intervals were entirely above zero

(CI = .390 to .635) for the indirect effect ($ab = .512$). Therefore, chronic pain acceptance significantly mediated the relation between perceived injustice and pain disability. Perceived injustice and pain acceptance together in the model accounted for 46% of variance in disability.

Finally, for the third model, higher perceived injustice was associated with lower pain acceptance ($a = -.561$) and lower pain acceptance was linked to higher psychological distress ($b = -.188$). The direct effect, that is the relation between perceived injustice and psychological distress, was significant ($c' = .261$). CIs were entirely above zero (CI = .077 to .136) for the indirect effect ($ab = .106$), indicating that chronic pain acceptance significantly mediated the relation between perceived injustice and psychological distress. The direct effect of perceived injustice and the mediating indirect effect of pain acceptance together explained 46% of the variance in psychological distress.

Discussion

The current study examined the mediating role of chronic pain acceptance in the relation between perceived injustice and pain outcomes among people with chronic pain. This study extends past research by using a large sample of individuals from the community with various types of chronic pain, including musculoskeletal pain, fibromyalgia, neuropathic pain, and headaches. As previously mentioned, most studies on perceived injustice have used samples of individuals with whiplash or chronic musculoskeletal pain due to an injury [1,4,5,15,19,37,38]. Therefore, this study allows us to generalize findings on perceived injustice to a wider population of chronic pain patients. Furthermore, this study advances previous work by examining the mediating role of pain acceptance in the relation between perceived injustice and patient functioning.

Supporting the first hypothesis, results showed that perceived injustice was significantly positively associated with pain intensity, disability, and psychological distress, and was significantly negatively associated with pain acceptance. Low pain acceptance was associated with higher pain disability and psychological distress. These results are consistent with past research [1,5,7,8,9,10,11,12,15,17,39]. Results also confirmed the second hypothesis and demonstrated that chronic pain acceptance significantly mediated the relation between perceived injustice and pain disability, as well as the relation between perceived injustice and psychological distress. Importantly, injustice and pain acceptance explained 46% of variance in both pain disability and psychological distress. These data provide the first support for chronic pain acceptance as a mediator of the relations between perceived injustice and pain-related disability and distress. Thus, low levels of pain acceptance associated with perceived injustice may help explain the impact of perceived injustice on these outcomes.

It is important to note that pain acceptance did not entirely reduce the association between perceived injustice and disability or psychological distress. Thus, perceived injustice and pain acceptance appear to be partially distinct and not simply different poles of the same dimension, which has previously been suggested [1]. Indeed, recent work suggests that perceived injustice and pain acceptance are related and partially distinct constructs [40]. Additional mediators may be needed to understand the link between perceived injustice and pain-related distress and disability. The inclusion of additional measures reflecting processes from the broader psychological flexibility model within which pain acceptance has been conceptualized [14] might prove useful in future studies of perceived injustice [6]. For example, emerging research suggests that the processes of cognitive defusion (i.e., the ability to observe thoughts as just thoughts and ultimately transient) and committed action (i.e., engagement in goal-directed

behaviour even in the face of challenges) are associated with lower distress and disability among people with pain [41,42,43]. Future research might thus assess the mediating role of these processes in addition to pain acceptance in the relations between perceived injustice, distress, and disability. Considering previous findings [4], a multiple mediator model including both anger intensity and regulation style and processes of psychological flexibility might also provide a more comprehensive account of the associations between perceived injustice and chronic pain outcomes.

Results did not support the proposed mediation model with pain intensity as an outcome variable. Although significantly correlated with pain intensity, the magnitude of the correlation between perceived injustice and pain was relatively weaker than the correlations between perceived injustice and disability and psychological distress, which is consistent with previous research [17,4]. Moreover, pain acceptance was weakly and negatively correlated with pain intensity in this study. This is consistent with past research findings, as pain acceptance generally seems to be more strongly related to measures of mental health and patient functioning than pain intensity [9,10,11,12,22,39]. This pattern of findings makes sense within the psychological flexibility conceptualization of acceptance in which willingness to experience pain and engagement in activities even with pain are viewed as independent of the severity of pain itself [44]. Therefore, the relation between perceived injustice and pain intensity may be better explained by other variables. Considering previous findings, for example, it may be that state anger intensity associated with perceived injustice might have a physiological impact on pain by such processes as altered endogenous opioid processing and increased muscle tension [45,46,47,48].

The current data might suggest the potential utility of treatments aimed at facilitating pain acceptance for mitigating the impact of perceived injustice among people with chronic pain. Acceptance and Commitment Therapy (or “ACT”) is the treatment approach most explicitly designed to increase pain-related acceptance [49]. Indeed, randomized controlled-trials have shown that ACT interventions contribute to significant increases in pain acceptance as measured by the CPAQ [50,51]. ACT is now considered an empirically supported treatment with “strong research support” for chronic pain by the American Psychological Association’s Division 12 [52]. Rather than focusing on symptom reduction, ACT aims to improve patients’ quality of life by enhancing psychological flexibility, reflecting greater acceptance of and openness to experiences (e.g., thoughts, feelings, and physical sensations) as they are in the moment, and greater engagement with values-based goals [44]. Thus, ACT-based treatment could potentially help people who perceive pain-related injustice to identify and re-connect with their values and to respond to thoughts of loss, blame, and unfairness with greater openness and awareness, particularly when doing so will enable greater involvement in valued activities. However, this study was cross-sectional and did not investigate the impact of ACT on perceived injustice and pain acceptance. Therefore, future research examining the utility of ACT for people with pain who perceive injustice is needed.

Optimal management of perceived injustice among people with chronic pain will also require consideration of the social context within which perceptions of injustice are likely to arise and be maintained. For example, studies have shown that people with pain experience mistreatment and unfairness in their interactions with their employers, healthcare providers, insurers, family members, and society at large [53,54]. Therefore, in addition to implementing interventions to facilitate pain acceptance at the level of the individual, the implementation of

strategies to address social and systems-level sources of injustice are likely needed to optimally mitigate the impact of the injustice experience among people with pain [55].

Several limitations deserve to be acknowledged. Most importantly, the correlational design of this study prevents us from inferring causality between variables. Longitudinal studies will be useful to determine with greater certainty the temporal relations between perceived injustice, pain acceptance, pain disability and psychological distress. Moreover, the questionnaires were completed online, so we did not have control over the context in which participants completed the questionnaires. The use of self-reported measures also leaves the possibility of a social desirability bias and could increase the magnitude of reported associations due to shared method variance. We did not collect information on the context surrounding pain onset, such as whether pain was precipitated by injury, and whether there was an identifiable source of blame for injury (e.g., another driver, employer, etc.). Interestingly, previous studies indicate that IEQ scores are comparable (i.e., within one standard deviation) across samples of people with pain following injury and those with more insidious onset [1, 17]; the mean IEQ score in the present study was similar to these previous reports. However, future research might examine whether the current mediation findings are comparable across patients with and without precipitating injuries. Finally, participants were recruited through the website of a chronic pain association and were largely female and Caucasian. Therefore, the generalizability of the current results to more diverse samples of people with pain needs to be tested.

Despite these limitations, this study is the first to provide support for the mediating role of pain acceptance in the relation between perceived injustice and pain-related distress and disability. Based on these findings, interventions aimed at increasing pain acceptance might have potential for reducing the impact of perceived injustice on distress and disability. Future research

is needed to test whether interventions that foster acceptance, such as ACT, improve recovery outcomes of people who perceive pain-related injustice. Research is also needed to identify additional mediators of the relationship between perceived injustice and adverse pain outcomes.

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Table 1 *Sample Demographics and Descriptive Statistics*

Variable	<i>M</i> (SD) or <i>N</i> (%)
Age	51 (11.41)
Education	
High school or Primary school	82 (17.3%)
Professional studies diploma	90 (19%)
College	114 (24.1%)
University	188 (39.7%)
Daily occupation	
Full-time work	99 (20.9%)
Part-time work	50 (10.6%)
Unemployed	182 (38.5%)
Disabled	142 (30%)
Annual revenue	
Less than \$20,000	99 (21.4%)
Between \$20,000 and \$39,999	90 (19.4%)
Between \$40,000 and \$59,999	101 (21.8%)
Between \$60,000 and \$79,999	72 (15.6%)
Between \$80,000 and \$99,999	45 (9.7%)
\$100,000 and more	56 (12.1%)
Pain Diagnosis	
Fibromyalgia	199 (41.9%)
Back pain	106 (22.3%)
Neck pain	36 (7.6%)
Neuropathic pain	70 (14.7%)
Arthritis	40 (8.4%)
Migraines or headaches	24 (5.1%)
Use of pain relief medication	418 (88.7%)
Psychotherapy for treatment of pain	76 (16.1%)

Table 2 *Intercorrelations between Perceived Injustice, Chronic Pain Acceptance, Pain Intensity, Pain Disability, and Psychological Distress*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. IEQ – Total	29.1	10.3	-	.91	.95	-.56	-.42	-.45	.29	.60	.63
2. IEQ – Severity	16.96	4.75		-	.74	-.53	-.39	-.43	.26	.54	.55
3. IEQ – Blame	12.15	6.25			-	-.52	-.40	-.41	.27	.57	.61
4. CPAQ – Total	21.0	6.8				-	.82	.70	-.22	-.60	-.57
5. CPAQ – Engagement	13.68	4.9					-	.17	-.17	-.53	-.51
6. CPAQ – Willingness	7.32	3.94						-	-.18	-.38	-.35
7. Pain Intensity	5.93	1.51							-	.46	.31
8. BPI	57.3	20.1								-	.70
9. HADS	17.6	7.0									-

Abbreviations. IEQ, Injustice Experiences Questionnaire; CPAQ, Chronic Pain Acceptance Questionnaire short-form; BPI, Brief Pain Inventory; HADS, Hospital Anxiety and Depression Scale.

Note. For all correlations, $p < .01$, two-tailed. Total scores were computed on a 5-point Likert scale for perceived injustice (range = 0-48), on a 7-point Likert scale for chronic pain acceptance (range = 0-48), on an 11-point Likert scale for pain intensity (range = 0-10) and pain disability (range = 0-100), and on a 4-point Likert scale for psychological distress (range = 0-42).

Table 3 Results of Mediation Analysis for Perceived Injustice, Chronic Pain Acceptance, Pain Intensity, Pain Disability, and Psychological Distress

		Consequent						
		M (CPAQ)			Y (Pain Intensity)			
Antecedent		Coeff.	SE	p		Coeff.	SE	p
X (IEQ)	<i>a</i>	-.561	.038	<.001	<i>c'</i>	.416	.094	<.001
M (CPAQ)		_____	_____	_____	<i>b</i>	-.161	.094	=.086
Constant	<i>i1</i>	3.986	.097	<.001	<i>i2</i>	5.346	.424	<.001
		R ² = .317			R ² = .089			
		<i>F</i> (1,472) = 218.59, <i>p</i> = .000			<i>F</i> (2,471) = 22.88, <i>p</i> = .000			
		M (CPAQ)			Y (BPI)			
Antecedent		Coeff.	SE	p		Coeff.	SE	p
X (IEQ)	<i>a</i>	-.561	.038	<.001	<i>c'</i>	.891	.096	<.001
M (CPAQ)		_____	_____	_____	<i>b</i>	-.914	.097	<.001
Constant	<i>i1</i>	3.986	.097	<.001	<i>i2</i>	5.971	4.357	<.001
		R ² = .317			R ² = .459			
		<i>F</i> (1,473) = 219.05, <i>p</i> = .000			<i>F</i> (2,472) = 200.43, <i>p</i> = .000			
		M (CPAQ)			Y (HADS)			
Antecedent		Coeff.	SE	p		Coeff.	SE	p
X (IEQ)	<i>a</i>	-.561	.038	<.001	<i>c'</i>	.261	.024	<.001
M (CPAQ)		_____	_____	_____	<i>b</i>	-.188	.024	<.001
Constant	<i>i1</i>	3.986	.097	<.001	<i>i2</i>	1.118	.108	<.001
		R ² = .317			R ² = .461			
		<i>F</i> (1,473) = 219.05, <i>p</i> = .000			<i>F</i> (2,472) = 202.26, <i>p</i> = .000			

Abbreviations. IEQ, Injustice Experiences Questionnaire; CPAQ, Chronic Pain Acceptance Questionnaire short-form; BPI, Brief Pain Inventory; HADS, Hospital Anxiety and Depression Scale.

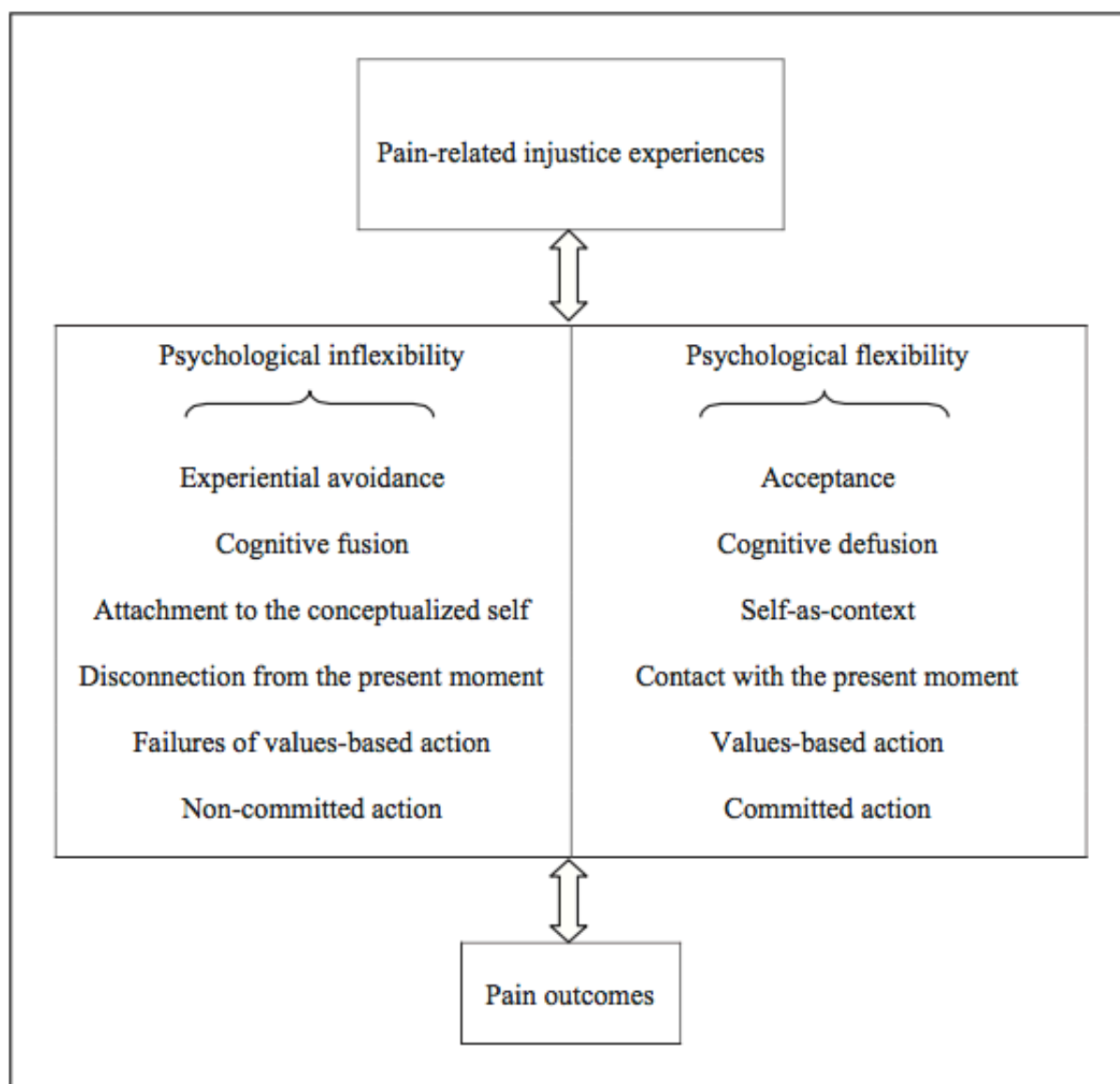


Figure 1. Application of the psychological flexibility model to understand the associations between pain-related injustice experiences and chronic pain outcomes. © The British Pain Society 2013. Scott, W., McCracken, L., & Trost, Z. (2014). A psychological flexibility conceptualisation of the experience of injustice among individuals with chronic pain. *British Journal of Pain*, 8, 62-71. Reproduced with permission.

Figure 2

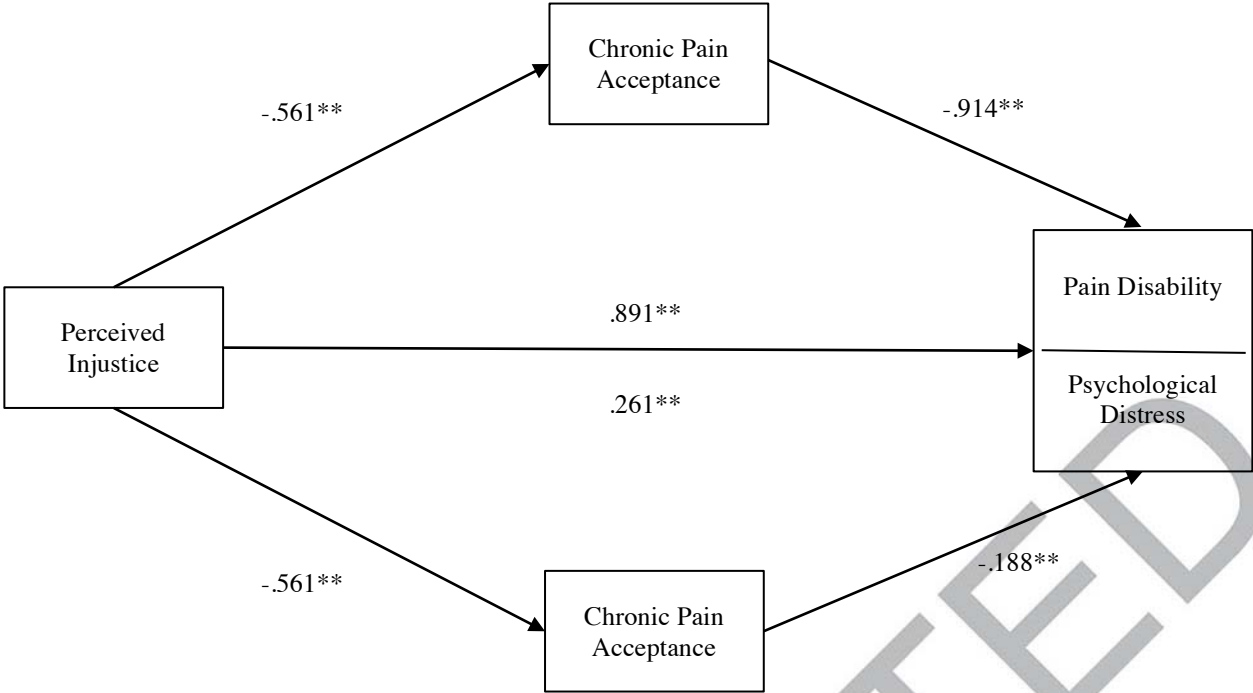


Figure 2. Path analysis showing direct and indirect effects between perceived injustice, chronic pain acceptance, pain disability and psychological distress.